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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,498	11/05/2003	Kousuke Obayashi	57454-986	6273

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EXAMINER

HANNON, THOMAS R

ART UNIT PAPER NUMBER

3682

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/700,498

Applicant(s)

OBAYASHI ET AL.

Examiner

Thomas R. Hannon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
4a) Of the above claim(s) 14 and 15 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 05 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/05/03&6/14/04.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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Applicant's election without traverse of Group I in the reply filed on July 13, 2005 is acknowledged.

Claims 14 and 15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10, 12, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 10, the reference to specific symbols defined by JIS is indefinite, as the particular standard is subject to change, thus changing the scope of the claim. It is suggested the actual shape be defined in the claim rather than rely on a standard.

With respect to claim 12, there is no proper antecedent basis for "said roller holder portions" as this limitation is not found in claim 1, but rather first properly defined in claim 6.

With respect to claim 13, the claim is indefinite, as it does not properly further define the invention of the previous claim. That is, claim 1 defines a support structure with a transmission input shaft and an output shaft. Claim 13 attempts to claim "A thrust needle roller bearing used for a support structure... as recited in claim 1", thus claiming less than that of claim 1. If an independent claim directed solely to a thrust needle roller bearing is to be desired, the claim should be drafted as such, and not refer back to an independent claim setting forth support structure not part of the bearing. If such an independent claim were to be drafted, the scope of

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other pending related applications must be taken into account to avoid numerous double patenting conditions.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 10, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winchell in view of Eveland.

Winchell discloses a support structure carrying a thrust load of a transmission having an input shaft with its rotation changed stepwise or continuously to be transmitted to an output shaft, wherein a thrust needle roller bearing carries a thrust load generated by rotation of the input shaft or the output shaft and the thrust needle roller bearing has needle rollers. The transmission includes a torque converter having an impeller and a turbine opposite to each other with a stator therebetween, and the thrust needle roller bearing having the needle rollers is provided at, at least one place respectively between the stator and the impeller and between the stator and the turbine. Eveland discloses a thrust bearing having rollers arranged in two rows. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the needle roller arrangement of the thrust bearings of Winchell such that two rows are provided for the desired purpose of permitting them to revolve at different rates of speed, those nearest the edge going fastest, so that there is no undue grinding or slipping action, as taught by Eveland.

Claims 1, 4, 5, 10, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi in view of Eveland.

Yamaguchi discloses a support structure carrying a thrust load of a transmission having an input shaft with its rotation changed continuously to be transmitted to an output shaft, wherein a thrust needle roller bearing carries a thrust load generated by rotation of the input shaft or the output shaft and the thrust needle roller bearing has needle rollers. The support structure carrying a thrust load of the transmission is a support structure for a continuously variable transmission having an input shaft with its rotation changed continuously to be transmitted to an output shaft, the width of a groove of a first pulley provided on the input shaft and width of a groove of a second pulley provided on the output shaft are each changed to vary the diameter of contact of a belt, looped over the first pulley and the second pulley, with the first pulley as well as the diameter of contact of the belt with the second pulley and thereby continuously change rotation of the input shaft to transmit resultant rotation to the output shaft. Eveland discloses a thrust bearing having rollers arranged in two rows. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the needle roller arrangement of the thrust bearings of Yamaguchi such that two rows are provided for the desired purpose of permitting them to revolve at different rates of speed, those nearest the edge going fastest, so that there is no undue grinding or slipping action, as taught by Eveland.

Claims 1, 3, 10, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Premiski et al (DE 4040414) in view of Eveland.

Premiski discloses a support structure carrying a thrust load of a transmission having an input shaft with its rotation changed stepwise or continuously to be transmitted to an output

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shaft, wherein a thrust needle roller bearing carries a thrust load generated by rotation of the input shaft or the output shaft and the thrust needle roller bearing has needle rollers. The transmission of Premiski includes a gear mechanism constituted of a plurality of gears and the thrust needle roller bearing having the needle rollers is provided to carry a thrust load generated by rotation of the gears. The rollers of Premiski are not arranged in two rows. Eveland discloses a thrust bearing having rollers arranged in two rows. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the needle roller arrangement of the thrust bearings of Premiski such that two rows are provided for the desired purpose of permitting them to revolve at different rates of speed, those nearest the edge going fastest, so that there is no undue grinding or slipping action, as taught by Eveland.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over each of Premiski, Yamaguchi, Winchell, individually, as applied to claim 1 above, and further in view of Winn.

Winn discloses an antifriction bearing in which the thrust needle roller bearing has a plurality of needle rollers and two annular cages (11, 12), the two cages respectively have a plurality of pockets having a radial length slightly larger than that of the needle rollers, roller holder portions (13) formed at the plurality of pockets respectively are structured to allow the two cages to hold the needle rollers therebetween in the direction from above and below; one of the two cages is fixed to the other cage on at both of the radially outermost end and the radially innermost end of the two cages (through tongues 6, 7), and a flat portion having a cross-section a height lower than that of the roller holders is provided (see, e.g. Figs. 6-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made modify the cages of

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each of the prior art to take the form of Winn because this would have provided a relatively light, rigid against warping, and an efficient structure to distribute the thrust pressure over the surfaces, as taught and suggested by Winn.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over each of Premiski, Yamaguchi, Winchell, individually, in view of Winn, as applied to claim 6 above, and further in view of Mitchel.

Mitchel discloses a roller bearing assembly, which utilizes welding to secure cage parts together. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize old and well known assembly techniques for the construction of the prior art bearing cages, including that of welding, as taught and suggested by Mitchel.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over each of Premiski, Yamaguchi, Winchell, individually, as applied to claim 1 above, and further in view of Jahn.

Jahn discloses a thrust roller bearing in which the roller holder portions have their corners rounded smoothly. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cages of the prior art such that roller holder portions have smoothly rounded corners because this is taught and suggested by Jahn as providing improved lubrication flow within the assembly.


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas R. Hannon whose telephone number is (571) 272-7104. The examiner can normally be reached on Monday-Thursday (8:30-7:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on (571) 272-7099. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Thomas R. Hannon
Primary Examiner
Art Unit 3682

trh